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RUTELARCHA, LUTERA AND CYPHELYTRA: NOTES ON TAXONOMY AND NOMENCLATURE, DIAGNOSES, AND KEYS (COLEOPTERA: RUTELINAE, RUTELINI)

by

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Rutelarcha, *Lutera* and *Cyphelytra* are restated as genera, in the subtribus Rutelina; Arrow (1917) considered them synonyms of *Parastasia*, in the Parastasiina. Machatschke's (1972) new name *Parastasia pauliana* for *Parastasia nigromaculata* (Ohaus) (= *Lutera*) therefore is superfluous, and merged into synonymy. Lectotypes are designated for *Cyphelytra ochracea* and *Rutelarcha quadrimaculata*. The genera and species are diagnosed in a table, keys and descriptions, and some diagnostic characters are figured.

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INTRODUCTION

During my study of the genus *Parastasia* Westwood, 1842 (Kuijten, in prep.) attention had to be paid to the genera *Rutelarcha* Waterhouse, 1874, *Lutera* Westwood, 1875, and *Cyphelytra* Waterhouse, 1875, as Arrow (1917) synonymized them with *Parastasia* "having entirely failed to find characters of more than specific importance, on which they can be separated". Ohaus (1938b) refuted this synonymization. He had ranged the three genera before (1918, 1934) in the subtribe Rutelina (together with some American genera), and *Parastasia* in the Parastasiina (together with the South-East Asian genera *Peperonota* Westwood, 1847, *Dicaulocephalus* Gestro, 1888 and *Ceroplophana* Gestro, 1893). Nevertheless, Arrow's action has been accepted by subsequent authors (Paulian, 1958; Frey, 1970). Machatschke (1972) took a

somewhat intermediate position by creating special groups within *Parastasia* for the species of the three genera, viz. the *quadrимaculata*-group, the *luteola*-group, and the *ochracea*-group, respectively, in addition to the groups into which Ohaus (e.g. 1900, 1918) divided the genus.

Several shared characters, however, some of which already stressed by Ohaus, induced me to agree fully with that author and to range the three genera in a special taxon, the Rutelina, well separated from the Parastasiina (table 1) and from the other Old World Rutelids (see key).

Arrows implicit synonymization of the three genera *inter se* is rejected here too. Some of the characters are so peculiar, that they justify generic status for each of the three species groups. On the other hand, the similarity of the genital apparatus of the ♂♂ suggests a close relationship of the genera. The correctness of their connection with the American section of the subtribe (Ohaus, 1918) is not discussed here.

<i>Parastasia</i>	<i>Rutelarcha</i> , <i>Lutera</i> , <i>Cyphelytra</i>
Ventro-apical part of the 4th segment in middle and hind tarsus with four fine, long setae (unique in <i>Parastasia</i> , of all Rutelinae, according to Ohaus, 1934). Fig. 15 P.	With two stout, rather short spurs and two fine, long setae. Figs 4, 9, 15.
Ventro-apical part of 4th segment in middle and hind tarsus forming a long, single, spiniform process (all Parastasiina). Fig 15 P.	Ventral apex with two or three, more or less equal teeth. Figs 4, 9, 15.
Parameres never densely setose in ventro-lateral parts (all Parastasiina).	Parameres with numerous dense and long, golden setae, ventro-laterally. Figs 1, 2 etc.
Ventral surface of 5th segment in middle and hind tarsus simple (<i>Parastasia</i>).	With a submedian, angular, setigerous protrusion. Fig. 5.
Lateral parts of the medially interrupted clypeo-frontal carina mostly more or less developed, sometimes only a suture or completely obsolete, often lateral terminus dentiform (<i>Parastasia</i>).	Never with a carina, only a medially interrupted suture.

Table 1. — Some differences between *Parastasia* (Parastasiina) and the genera *Rutelarcha*, *Lutera* and *Cyphelytra* (Rutelina)

Key to the genera of Rutelina in South-East Asia (partly after Ohaus, 1934)

1. Labrum horizontal, movable homalochilidous Rutelinae 2
- Labrum vertical, immovably fused with clypeus
- orthochilidous Rutelinae

2. Lateral margin of elytra without membranaceous border, antennae with ten segments, with a few exceptions Rutelini 3
 - Lateral margin of elytra with a membranaceous border; antennae with nine segments Anomalini
3. Clypeo-frontal suture complete subtribes not treated here
 - Clypeo-frontal suture or carina interrupted in middle 4
4. Vento-apical part of fourth tarsal segment in middle and hind legs with a single, spiniform processus; nearly always an interrupted clypeo-frontal carina Parastasiina
 - Ventral apex with three teeth; a simple, medially interrupted, more or less narrow, variably deeply impressed clypeo-frontal suture Rutelina (Asian) 5
5. Elytral striae strongly twisted, partly following contours of colour pattern; northern India *Cyphelytra*
 - Striae subparallel, variably well developed 6
6. Variably large parts of pronotum, on both sides of disc, with dense, deep, more or less longitudinal striolation; basic colour orange or red, with blackish pattern, or the reverse; Indo-China, Malaysia, Indonesia, Philippines *Rutelarcha*
 - Pronotum without such areas, virtually simply punctate; basic colour cream to yellowish brown, with a few dark spots, which may be enlarged and variably connected, in extreme cases nearly completely darkening the insect; Nepal, Indo-China, Malaysia, Indonesia, Philippines ... *Lutera*

DIAGNOSES OF GENERA AND SPECIES, KEYS TO SPECIES

***Cyphelytra* Waterhouse, 1875**

Type-species: *Cyphelytra ochracea* Waterhouse, 1875, by monotypy.

Cyphelytra Waterhouse, 1875: 367 (description of genus and species; type-locality Allahabad, a second specimen from Darjeeling); Westwood, 1875: 236 (redescription, figures; habitat Himalaya; Ohaus, 1898: 30 (cited); Ohaus, 1900: 260 (classification discussed, close to *Parastasia*); Arrow, 1917: 46 (synonym of *Parastasia*; Allahabad is doubtful locality); Ohaus, 1918: 38 (catalogued in *Rutelina*; distribution Allahabad, Darjeeling); Ohaus, 1934 (catalogued in *Rutelina*; genus redescribed, figures, key); Ohaus, 1938b: 130 (arguments against Arrow's synonymization); Machatschke, 1972: 45 (catalogued as *ochracea*-group in *Parastasia*).

***Cyphelytra ochracea* Waterhouse, 1875**
(figs. 1-6)

Material examined: 1 ♂, here designated lectotype (London), labelled "Type", round, print, red margin; "Allahabad", hand; "Bowring 63.47", print; "*Cyphelytra ochracea* C. Waterhouse", hand; "Figured for Fauna of India", print; my lectotype label. One ♂ (London), "Berenag 6,000' [= feet] Almora Dt. U.P., R.N. Parker 1.vii.1923"; "India ex Dehra Dun Coll. B.M. 1931-2".

Diagnostic characters of genus and species.

Because of the rarity of the species a more extensive diagnosis than in the other taxa seemed useful.

Length 14.5-15.5 mm (shortest distance between anterior and posterior margins of pronotum + shortest distance between base and sutural apex of elytra). Colour light brownish orange, the elytra slightly more yellowish; reddish brown to brownish black are: anterior and lateral margins of head, clypeo-frontal suture, two spots between the eyes; in pronotum the anterior and posterior margins, an anterior transverse series of six spots, a posterior series of three spots, two small lateral spots between these series, and a narrow, medially interrupted band along posterior margin; margins of scutellum; several narrow, undulating, longitudinal, and two discal, oblique spots in each elytron; two submarginal spots in pygidium; posterior margins of abdominal sternites; parts of thoracal sternites, spots on femora and tibiae, entire tarsi. In the Almora specimen the dark areas more blackish than in lectotype, and so strongly extended, that only four large yellowish areas in each elytron remain, corresponding with the weakly punctate areas in the type (see below); the spots in pronotum larger, partly coherent; dark areas on underside larger. Anterior margin of clypeus with two low, obtuse, somewhat erect dentiform protrusions. Clypeo-frontal suture obsolete in middle, bordered by some coarse rugules. Pronotum with finely carinate lateral margins, bordered by a single series of close, subtransverse, somewhat rugulose punctures; surface with small, variably widely separated punctures, mixed with considerably larger ones, which are mainly concentrated in the dark areas – in the Almora specimen deeper, larger, partly umbilicate, and more numerous. Posterior margin laterally marginate, margination bordered by a punctate groove. Arrow's remark (1917) "the contorted elytral striae . . . are highly peculiar and found in no other Lamellicorn beetle known to me" is really true: the elytral punctation is longitudinally and transversely seriate, locally situated in shallow grooves, partly more or less circumfering five very finely punctate, slightly elevate, discal and lateral areas, partly bordering the dark spots – in the Almora specimen punctures more numerous and denser, partly more irregu-

lar, but also delimiting similar finely punctate areas. Propygidium dull by microsculpture, with numerous widely spaced, round punctures, most with a fine reclining seta, much shorter than the pygidial ones. Pygidium anteriorly with dense, transverse rugulation, posteriorly with variably widely spaced, partly transverse punctures, mixed with scarce larger ones, which bear a long, erect, curved seta, especially before apex. Mesometasternal process very short, not reaching level of anterior margin of middle coxae. Metasternum densely punctate, each puncture with a suberect seta, short in disc, very long laterally. Fifth segment in fore tarsus subequal to the strongly transverse other ones together; internal claw as long as fifth segment, parallel-sided, finely cleft at apex; external one much shorter, simply acuminate. In middle and hind tarsi the external claws are long, slender, parallel-sided, finely cleft at apex; apices of fourth segments with two stout, short spurs separated by a protrusion of the segment itself, and two long fine lateral setae. Parameres elongate, subtriangular, ventrally with a thick covering of long, fine, golden setae. The Almora specimen at first sight looks quite different, but its parameres are identical; the pattern and punctuation can easily be interpreted as an intensification of those in the lectotype.

The species seems to have exceptional habits; only a few specimens have been collected, in well explored areas (e.g., Darjeeling).

Rutelarcha Waterhouse, 1874

Type-species: *Rutelarcha quadrimaculata* Waterhouse, 1874, by monotypy.

Rutelarcha Waterhouse, 1874: 52; Westwood, 1875: 235 (redescription, figures); Ohaus, 1900: 227/260 (considered the genus close to *Parastasia*); Arrow, 1917: 36 (*Rutelarcha* is a synonym of *Parastasia*); Ohaus, 1918: 31 (catalogued in Rutelina); Ohaus, 1934 (catalogued in Rutelina, description, key, figures); Ohaus, 1938b: 130 (arguments against Arrow's synonymization); Machatschke, 1972: 37/46 (catalogued as *quadrimaculata*-group of *Parastasia*).

Diagnostic characters.

Length ca 15-18 mm. Anterior margin of clypeus with two weak, rounded, erect protrusions. Dorsal surface of head partly with dense, more or less parallel, transverse to oblique, fine striae, many reaching from clypeo-frontal suture to posterior margin of head; frons and vertex impunctate in middle or with a few round punctures, sometimes with extremely fine micro-punctures, only visible at strong magnification and illumination. Pronotum strongly, more or less longitudinally striolate in lateral part of disc; the striolation may be extended to antero-lateral angles, or occupy most of the

lateral part of pronotum; middle of disc finely punctate. Elytra with a fine lateral margination, uninterruptedly continued along suture. Sutural interspace slightly convex, somewhat narrowing and bordered by a rather deep groove before apex. Internal claw of fore tarsus, external claws in middle and hind tarsi considerably longer than the other claws, with more or less parallel dorsal and ventral margins, and apically bifurcate; the dorsal branch of the bifurcation in ♂ smaller than ventral one, in ♀ subequal and the incision deeper. Parameres not fused, together somewhat triangular, sides slightly sinuate, ventro-lateral parts with a fringe of rather long, close setae.

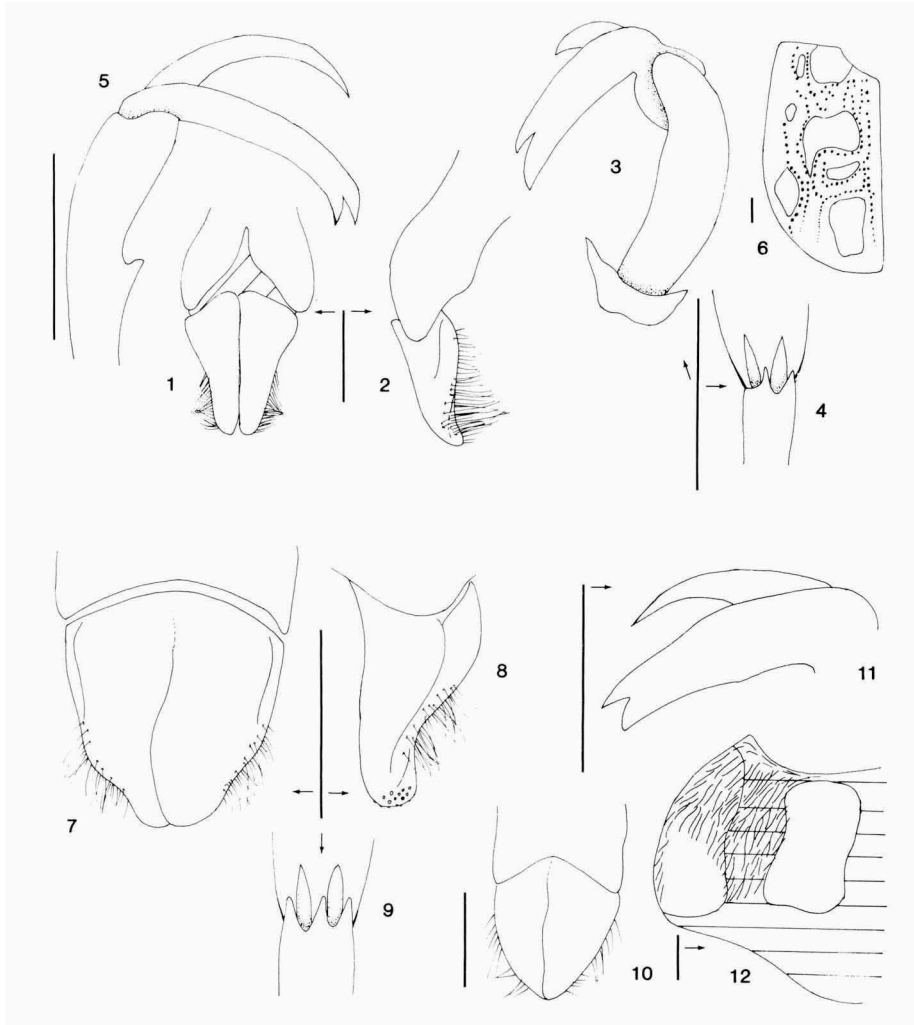
KEY TO THE SPECIES OF *RUTELARCHA*

1. Elytra with deep roundish punctures; mesometasternal process directed downward, amply surpassing anterior margin of middle coxae, strongly compressed; pronotum black, laterally reddish to orange, with a black spot in the red area; striolation mainly concentrated in the lateral parts of the black area; elytra yellowish to red, each with a small black spot behind humeral callus and a large transverse one in posterior half; Malaysia, Borneo, Sumatra *quadrимaculata* Waterhouse
- Elytra with very small and shallow punctures; mesometasternal process not bent downward, hardly surpassing anterior margin of middle coxae; pronotum with a broad black area along posterior margin, with three forward extensions, the lateral ones reaching anterior margin, the median one variably long; striolation reaching lateral margins; elytral pattern in light specimens approximately as in *R. quadrимaculata*, in dark ones the black may be so augmented that the reddish or orange is restricted to a submedian transverse band and a preapical spot; Vietnam, Sulawesi, Luzon *bakeri* Ohaus

The species are sufficiently recognizable from the table, keys and figures, so more extensive descriptions are omitted here.

***Rutelarcha quadrимaculata* Waterhouse, 1874** (figs. 7-9)

Rutelarcha quadrимaculata Waterhouse, 1874: 52 (description; type-locality Penang; three specimens, in Banks' and Pascoe's collections); Westwood, 1875: 235 (redescription, figures); Ohaus, 1900: 260 (claw characters; Penang, Kinabalu); Arrow, 1917: 36 (creating, by the synonymization of *Parastasia* and *Rutelarcha*, the homonyms *P. quadrимaculata* Waterhouse,



Figs. 1-6. *Cyphelytra ochracea* ♂. 1, 2, parameres in dorsal and lateral view; 3, right fore claws, 4th and 5th tarsal segments, internal view; 5, claws and 5th tarsal segment of left middle leg, external view; 6, elytron with twisted striae and seven finely punctate areas. Figs. 7-9. *Rutelarcha quadrimaculata* ♂. 7, 8, parameres in dorsal and lateral view; 9, apex of 4th tarsal segment of hind leg, ventral view. Figs. 10-12. *Rutelarcha bakeri* ♂, ♀. 10, parameres in dorsal view; 11, right fore claws, internal view; 12, pronotum in latero-dorsal view, ♀, with striolation and hatched blackish area. Scale lines represent approximately 1 mm.

1874 and *P. quadrimaculata* Ohaus, 1900); Ohaus, 1918: 31 (catalogued; Malakka, Kinabalu and Matang (Borneo), Medan (Sumatra)); Ohaus, 1934 (catalogued, figured); Ohaus, 1938 a: 127 (catalogued from Kinabalu, 800-3000 ft, iii-v); Machatschke, 1972: 46 (catalogued in *Parastasia*, thus continuing the homonymy). (See under *Lutera nigromaculata*)).

Material examined: 1 ♂ (London), here designated lectotype, labelled "Type", print, round, red margin; "E collectione Banks", round, hand; "*Rutelarcha 4-maculata*, C. Waterh. (Type).", Waterhouse's hand; my red, typewritten lectotype label. Three ♂♂ (Berlin): 1 from Matang, W, Borneo, named by Ohaus, 2 from Kinabalu, N. Borneo. Five ♀♀ (coll. Kuijten) from Maxwell Hill and Cameron Highlands, iv, v and vi, Malaysia.

***Rutelarcha bakeri* Ohaus, 1915**
(figs. 10-12)

Rutelarcha bakeri Ohaus, 1915: 343 (description; type-locality Baguio, Luzon, Philippines); Ohaus, 1918: 31 (*R. bakeri* omitted in catalogue); Ohaus, 1934: 113 (catalogued; Philippines, Tonkin); Machatschke, 1972: 46 (catalogued).

Material examined: 1 ♀, holotype (Berlin), labelled "Baguio Bengue [sic] Baker", print; "Type", print, red; "*Rutelarcha Bakeri* Ohs", red, Ohaus' hand; "Zool. Mus. Berlin", print. Three ♀♀, "cotypes" (Berlin), one labelled "Philippinen Luzon II '14 Imugan", print, date and city hand; "*Rutelarcha Bakeri* Ohs Cotype", red, Ohaus' hand; "Zool. Mus. Berlin", print; the second with a card with mouthparts; "Tonkin Laos", print; the same cotype and Berlin labels; the third with the same cotype and Berlin labels and "Luzon Mt Banahao Baker", print. Two ♂♂ (Berlin) from "Philippinen N. Luzon Imugan", underside "S. Boettcher 6.6.16", and "Mt Banahao 10.6.1914 Boettcher", "Luzon". One ♀ (Leiden) from the same locality and source. One ♀ (London) from "Indonesia Suiawesi Utara, Dumoga-Bone N.P. 800-1100 m. 16-21.3.'85 R. Blackith".

Note on Ohaus' "cotypes". — In the original description Ohaus mentioned only a single ♀, from Baguio. Certainly he would have mentioned the specimen from the outlying locality Tonkin, if he had had it before him at that time, not to speak about the Imugan and Banahao specimens. The cotype labels certainly are erroneous later additions. As will be shown later (Revision of *Parastasia*, in prep.) Ohaus, in several cases, mistakenly added type labels to specimens collected years after the original description, in other cases he provided specimens of species described long before with a type label, in several cases demonstrably more than 30 years afterwards.

***Lutera* Westwood, 1875**

Type-species: *Lutera luteola* Westwood, 1875, by monotypy.

Lutera Westwood, 1875: 236 (description, figures); Ohaus, 1900: 227/260 (classification discussed, close to *Parastasia*); Arrow, 1917: 36 (*Lutera* synonym of *Parastasia*); Ohaus, 1918: 39 (catalogued in *Rutelina*); Ohaus, 1934: 112 (catalogued in *Rutelina*; description, key, figures); Ohaus, 1938b: 130 (arguments against Arrow's synonymization); Machatschke, 1972: 45 (catalogued as *luteola*-group in *Parastasia*.)

Diagnostic characters.

Basic colour cream to yellowish brown, with a pattern of reddish to nearly

black spots, which may be variably extended, so much so as to render, in one species, most of dorsal surface blackish. Anterior margin of clypeus with two weak, rounded, suberect median denticles; margins of clypeus finely carinate. Clypeo-frontal suture variably widely interrupted in middle. Frons in middle with an often somewhat depressed, more or less triangular area with much deeper, denser and larger punctures than in rest of fronto-vertex. Pronotum without depressions, or with only a medio-lateral one, or with an additional larger and deeper one at about halfway between lateral margin and middle. Punctures in these depressions larger, denser and deeper than most of the remaining ones. Margination of posterior margin of pronotum restricted to postero-lateral angles, or reaching level of antero-lateral angles of scutellum. Elytral punctures fine, shallow, mostly ranged in ca. nine longitudinal series; most interserial punctures extremely fine and widely spaced. Dorsal surface virtually hairless, or with numerous erect, slightly curved, long setae on head, in the depressions and near postero-lateral angles of pronotum, and along anterior margin of elytra. In ♂ the internal front claw much thicker and longer than the external one, apically incised, the dorsal branch much smaller and sharper than the ventral one; in middle and hind legs the external claws apically cleft, the branches subequal, internal and external claws approximately equally long. In ♀ the internal front claw, and the external claws in middle and hind legs, apically cleft, the branches subequal or the dorsal one longer than the ventral one; all claws about equally long; elytra somewhat thickened along lateral margin after humerus. Form of parameres somewhat variable; ventro-laterally always with a fringe of long, close setae.

KEY TO THE SPECIES OF *LUTERA*

1. Dorsal surface without long setae; pronotum without depressions; parameres long and slender, widely separated dorsally, slightly asymmetrical; dark pattern very restricted; Nepal and Andamans to Lesser Sunda Islands *luteola* Westwood
- Dorsal surface of head and, in pronotum, at least the depression, with long setae 2
2. Seriate punctures of elytra in grooves; dark pattern very restricted; Minahassa (Sulawesi) *striata* Heller
- Elytra not longitudinally grooved; dark pattern considerably developed, sometimes insect mostly or entirely dark 3
3. Parameres asymmetrical, completely fused dorsally in basal half; Luzon *boettcheri* Ohaus

- Parameres symmetrical, dorsal median suture at least visible, not fused 4
- 4. Parameres subtriangular, basal piece of genital apparatus moderately emarginate at articulation with parameres; Mindanao *nigromaculata* Ohaus
- Parameres with broader apex, not triangular in dorsal view, emargination of basal piece deep and triangular; elytral derm shining, hardly microgranulate; Luzon (for a specimen from Indo-China see below) *nigromaculata* Ohaus

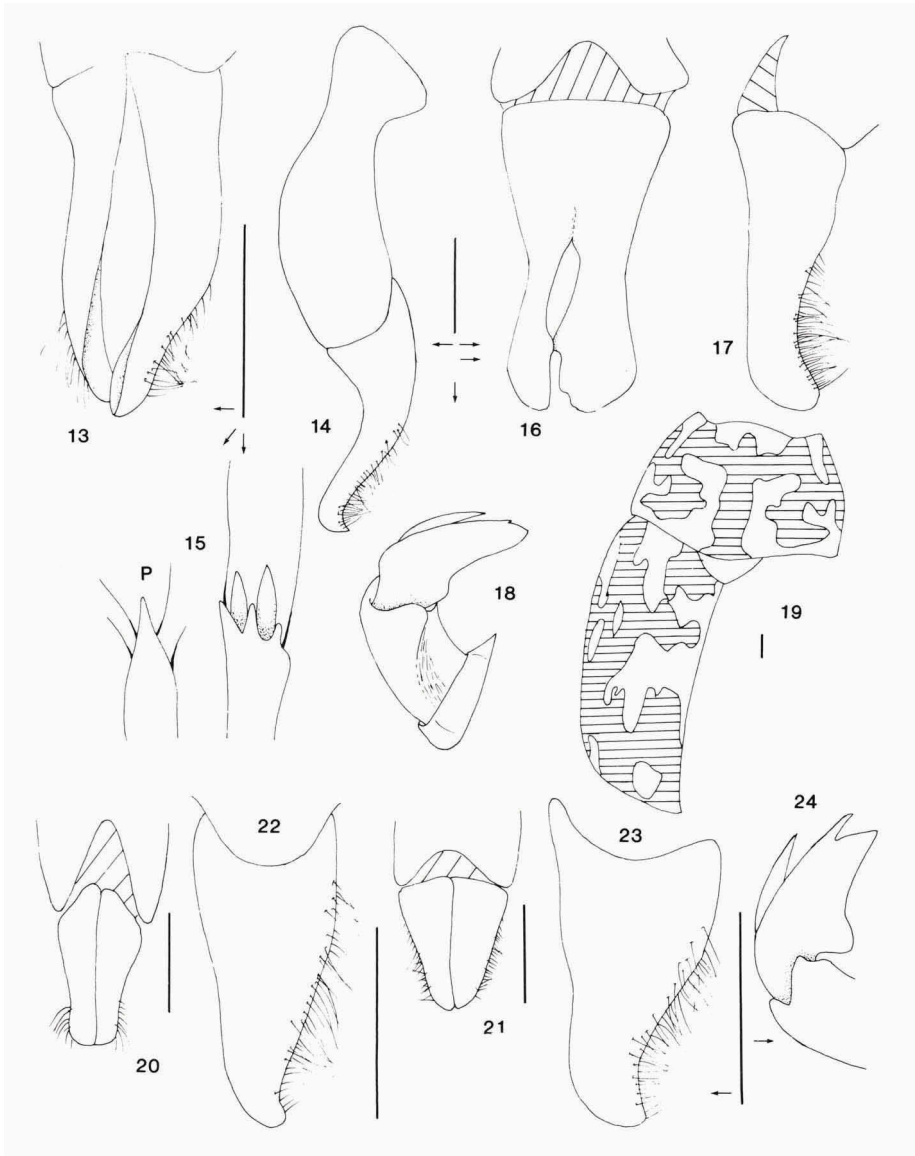
***Lutera luteola* Westwood, 1875**

(figs. 13-15)

Lutera luteola Westwood, 1875: 236 (description; type-locality Sarawak); Dohrn, 1886: 180 (Specimens from Bangkok); Heller, 1897: 22 (Specimens from Amadan and Nepal compared with *Lutera striata* Heller); Ohaus, 1900: 260 (Distribution: Hymalaya, Nicobars, Siam, Adonara (near Flores, Lesser Sunda Islands)); Arrow, 1917: 36 (redescription – as *Parastasia luteola*; Nicobars, Malaysia, Siam, Borneo, “etc.”; Himalaya is probably incorrect); Ohaus, 1918: 39 (catalogued; Java added); Ohaus, 1934: 112 (catalogued; Sumatra added); Machatschke, 1972: 45 (catalogued in *luteola*-group of *Parastasia*);

Material examined: Holotype (Oxford), a ♀, bearing a card with the mouth parts and labelled “Type H.T.”, print, round, red margin; “Sar 846”, round, hand; “Sarawak Borneo Wallace 1865”, two different hands; “*Lutera luteola* Westw. Trans Ent Soc 1875”, hand; “Type Col: 628 *Lutera luteola* Westw. Hope Dept. Oxford”, hand and print combined. Though the pronotal and elytral patterns are essentially constant in the species, no two specimens are identical in minor details. The pattern of the above mentioned specimen exactly fits with Westwood’s description, so it may safely be considered the holotype. Four ♂♂, three ♀♀, and one unsexed specimen (Dresden) are from “Nepaul 51/50”, Nicobars, Andamans and Pajakombo (Sumatra). One ♂, one ♀ (Leiden) from Nangasaki (Borneo) and Pajakombo. One ♀ (Leiden) from Mt Bandahara, 810 m, N. Sumatra, light, multistratal evergreen forest, vi-vii.1972. Three ♂♂ (coll. Kuijten) from Cameron Highlands and Maxwell Hill, Malaysia. One ♀ (coll. Kuijten) from Dolok Merangir, N. Sumatra. Three ♀♀ from Borneo, one ♂ from Andaman, 2 ♀♀ from Nicobar, one ♀ from Mt. Ardjuno, E. Java, one ♂♀ from Sumbawa (Paris). Six specimens without localities (London, Paris).

Diagnosis. — The species is easily recognizable from the table, keys and figures. The ground colour is light yellowish cream to yellowish ochre. Variably light or dark reddish to blackish are dorsally: margins of head, and the clypeo-frontal suture, in pronotum the anterior and posterior margins, and four (exceptionally more) variably large, roundish spots in one (rarely two) transverse series on disc, in a single specimen some anterior spots connected with posterior ones; in elytra a variably long, often strigiform spot on humeral and apical calluses, sometimes prolonged or even connected to each other, the suture, and a roundish, medio-discal spot; one or more of the elytral spots may



Figs. 13-15. *Lutera luteola* ♂. 13, 14, parameres in dorsal and lateral view; 15, apex of 4th segment in hind tarsus, ventral view, P: the same in *Parastasia*. Figs. 16-19. *Lutera boettcheri* ♂. 16, 17, parameres in dorsal and lateral view; 18, left fore claws, 4th and 5th tarsal segments, internal view, somewhat ventrally; 19, pronotum and elytron, reddish brown pattern hatched. Figs. 20-24. *Lutera nigromaculata* ♂. 20, 21, parameres in dorsal view, specimen from Luzon and Mindanao, respectively; 22, 23, parameres in lateral view, specimen from Luzon and Mindanao, respectively; 24, left fore claws, internal view. Scale lines represent approximately 1 mm.

be absent or nearly so. Underside yellowish, with some darker, reddish areas, sometimes margins of all sternites variably widely dark reddish. Femora with a variably large dark spot; tibiae and tarsi often dark reddish to blackish. Dohrn (1886) saw numerous specimens from Bangkok with some coloric variation, but not specifically separable from *Lutera luteola*. The specimens studied show some variation in slenderness and curvature of the parameres depending on locality, but the external characters are virtually constant. Until more material from the various localities has become available I refrain from an eventual splitting up of the material into subspecies.

***Lutera striata* Heller, 1897**

Lutera striata Heller, 1897: 22 (description; type-locality Minahassa (Sulawesi)); Ohaus, 1900: 260 (mentioned only); Ohaus, 1918: 39 (catalogued; Minahassa); Ohaus, 1934: 112 (catalogued); Machatschke, 1972: 46 (catalogued in *luteola*-group of *Parastasia*).

Material examined: One single specimen, the ♀ holotype (Dresden), with labels "Typus", rosa, print; "N. Celebes 9400", print and hand respectively; my red, typewritten holotype indication. Heller's text reads "... Minahassa, leg. Dr. Platen Mus. Dresd. No. 9400."

Diagnosis. — Length ca. 19 mm. Yellowish light brown; reddish brown are: two oblong spots between the eyes; a circular spot near middle of posterior margin of pronotum and three irregular ones in the depressions; an antero-lateral and a vague subapical spot in the elytron. About halfway between lateral margin and middle of pronotum there is a longitudinal zone with well spaced, shallow, large, annular punctures, denser in the depressions, and often bearing a seta; rest of surface with variably small, more spaced punctures. Most elytral punctures fine, close, annular, concentrated in ca. 9 longitudinal series, situated in evident grooves; interserial areas slightly convex, with extremely fine, widely spaced punctures. Mesometasternal process slightly longer than in the other species.

***Lutera boettcheri* Ohaus, 1916 (figs. 16-19)**

Lutera boettcheri Ohaus, 1916: 353 (description; type-locality Mt Imugan, N. Luzon); Ohaus, 1918: 39 (not recorded); Ohaus, 1934: 112 (catalogued; Luzon); Machatschke, 1972: 45 (catalogued in *luteola*-group of *Parastasia*).

Material examined: Two specimens (Berlin): the ♀ on which Ohaus based his description (the holotype), labelled "N. Luzon Mt Imugan Böttcher S.", on underside "vi.1916", print; "♀";

"Type", red, print; "Lutera Böttcheri Ohs", hand; "Zool. Mus. Berlin", print; and a ♂, labelled "Philippinen N. Luzon Imugan", hand and print, on underside "Boettcher 6.6.'16", hand; "Lutera Böttcheri Ohs Cotype", hand (Ohaus?); "Zool. Mus. Berlin", print. The cotype indication must be an error as Ohaus expressly recorded only a single ♀ (see note under *Rutelarcha bakeri*).

Diagnosis. — The reddish brown dorsal pattern, on a lighter brown ground colour, reminds strongly of some of the more heavily patterned specimens from more southern Philippine localities (*Lutera nigromaculata*). The ♂ is easily recognizable by its parameres, with the dorso-median margins fused in basal half.

The ground colour must have darkened considerably since Ohaus' time: he described it as yellowish white.

***Lutera nigromaculata* Ohaus, 1900**
(figs. 20-24)

Lutera nigromaculata Ohaus, 1900: 261 (description, a single specimen; type-location Lakhon, Tonkin; locality of type not given); Ohaus, 1905: 97 (description of presumed ♂; Camarines, Philippines); Ohaus, 1918: 39 (catalogued; Lakhon, Camarines); Ohaus, 1930: 140 (description of var. *nigrita*, based on a single ♂; Mt Banahao (Luzon)); Ohaus, 1934: 112 (catalogued; Lakhon, Camarines, Luzon); Paulian, 1958: 80 (description of a specimen from Lakhon in Paris, considered the type by Paulian; "... specimens from the Philippines seem to be quite different. . . .", notwithstanding "Ohaus considering them conspecific" (my translation)); Frey, 1970: 174 (description of "*Parastasia (Lutera) nigromaculata guttata* nov. subsp."; type-locality Khongsedane, Wapik-Hamthong Prov., Laos); Machatschke, 1972: 45 (catalogued as *Parastasia pauliana* Machatschke, nomen novum for *Parastasia [Lutera] nigromaculata* (Ohaus). The var. *nigrita* catalogued as a valid species); Machatschke, 1974: 364 (Frey's taxon catalogued as *Parastasia nigromaculata* Blanchard, 1850, subsp. *guttata* Frey, instead of as *Parastasia pauliana* subsp. *guttata*, in accordance with the changing of names (1972)).

Synonymy. — *Parastasia pauliana* Machatschke, 1972, has been established as a nomen novum for *Parastasia* [= *Lutera*] *nigromaculata* (Ohaus, 1900). Ohaus' name was preoccupied by *Parastasia nigromaculata* (Blanchard, 1850) after Arrow's synonymization of *Parastasia* and *Lutera* (1917). The synonymization is incorrect, consequently *Parastasia pauliana* is superfluous and merged into synonymy here (syn.nov.).

Note. — Machatschke (1974) connected Frey's subsp. *guttata* with *Parastasia nigromaculata* (Blanchard, 1850), evidently an error as Frey expressly connected it with Ohaus' (*Lutera*) species. The Frey Museum has been closed for years now, so I could not study his specimens. The subspecies was established on colour characters only.

Note on the type-material. — Ohaus based his description on a single ♀, the

holotype (Ohaus, 1905), characterized by two transverse series of six, respectively five black spots on the pronotum and eight spots on each elytron. I studied five specimens (Berlin) bearing type (1 ♀ from Lakhon) and cotype labels (3 ♀♀ from Luzon, 1 ♂ from Camarines, without genital apparatus); the Luzon specimens are dated 1914 and 1916; none of the five shows the pattern described by Ohaus for the holotype. Ohaus (1934) recorded only Lakhon and Camarines for *Lutera nigromaculata*. Paulian located the type (Lakhon, Laos) in the Paris Museum, but according to Dechambre (pers.comm. x.1987) it is no longer present. Summarizing, the Berlin type labels must be erroneous later additions (see note on cotypes under *Rutelarcha bakeri*).

Material examined: One ♀ (Berlin) "Tonkin Lakhon", hand; card with mouthparts; "*Lutera nigromaculata* Ohs. Type ♀", red, Ohaus' hand; "Zool. Mus. Berlin", print; one ♂ (Berlin) "Camarines Sur Maes C.", hand; same Berlin label; two ♀♀ (Berlin) from "Mt. Banahao, Luzon, vi.1914, G. Boettcher leg.", with red labels in Ohaus' hand "*Lutera nigromaculata* Ohs Cotype"; one ♀ (Berlin) "S. Luzon Mt. Isarog Böttcher S.", print, on underside in hand "Camarin. iv.16"; "*Lutera nigromaculata* Ohs Cotype", red, Ohaus' hand, same Berlin label. One ♀ (Berlin) "Luzon, Mt. Banahao 10.6.1914 leg. G. Boettcher", print, date hand; "Type", red, print; "*R. [sic] nigromaculata* Ohs. v. *nigrita* Ohs.", red, Ohaus' hand; same Berlin label. Two ♂♂ (Berlin) from Mt. Banahao, 11.vi.1914 and from Mt. Makiling, 1.v.1932, 400 ft, respectively. One ♂ (Leiden) from Mt. Banahao, 10.vi.1914, leg. G. Boettcher. One ♂ (Dresden), from the same locality. Tentatively included here six ♂♂, three ♀♀ (coll. Kuijten) from Mindanao, Philippines.

Type-material of *Lutera nigromaculata* probably no longer existing, Ohaus' concept of the species can only be derived from his description (see above). The Berlin "type"-specimen from Lakhon – a doubtful origin – fits in all respects within the Luzon material. I see no reason to consider the insects specifically different. Ohaus (1905) expressly considered the Philippine specimens conspecific with his described continental specimen (i.e. not the Berlin "type"), but in my opinion their identity is not certain, the patterns not fitting with the description. Study of the variability in more material from Indo-China, and of the genital apparatus should reveal their real relationship. For the moment Ohaus' name is maintained for the Philippine specimens. The Mindanao specimens have somewhat different parameres, but are externally very similar. Their true status (variant, subspecies or species) should be established after more material, including specimens from the other islands, has become available; preliminarily they are included here.

Diagnosis. — Dorsal ground colour variably yellowish brown. Blackish or dark reddish are the clypeo-frontal suture and two frontal spots, in the pronotum a variably long, longitudinal median band, four spots as in *L. luteola* and a more or less zigzag band between discal and lateral spots, in the elytra six

spots as in *L. luteola* plus some more discal ones; the pronotal and elytral spots may be extended so as to form various transverse and longitudinal bands, or, in extreme cases, to leave only small areas yellow. A ♀ from Mindanao is nearly completely black and shows a rather more developed punctation than lighter specimens. Parameres symmetrical, together more or less triangular in dorsal view, relatively somewhat shorter in the Mindanao material, dorsal margins contiguous, ventro-lateral parts with numerous long setae; basal piece, at articulation with parameres, deeply emarginate, in Mindanao specimens much more shallowly emarginate.

Ohaus (1930) described as var. *nigrita* a single ♀ with strongly reduced yellow areas, collected at Mt. Banahao together with numerous less melanistic specimens. The elytra are, especially laterally, rather dull by a strong microgranulation, which is weak or virtually absent in the lighter specimens; elytral punctures large, shallow, annular, again especially laterally, in the lighter specimens mostly small, deep and simple. The true relation of this specimen remains unresolved: a sculpture variant linked with the strong melanisation, a separate species? Dark specimens in the Mindanao material, except for the ♀ mentioned above, are hardly more sculptured than the lighter ones. Machatschke's (1972) use of the name *Parastasia* [*Lutera*] *nigrita* Ohaus, with Mt. Banahao as only locality, for the Philippine representatives of the *luteola*-group (apart from *L. boettcheri*, of course) possibly has been induced by Paulian's (1958) observation, that the Philippine insects are different from the Lakhon specimen of *L. nigromaculata* in Paris.

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